Homework 4

CMSY-217, Spring 2014

Upload your solution to the Canvas course website as a zip archive file prior to the start of class on Thursday, April 10.

(Networked Morse Code) Perhaps the most famous of all coding schemes is Morse code, developed by Samuel Morse in 1832 for use with the telegraph system. The Morse code assigns a series of dots and dashes to each letter of the alphabet, each digit, and a few special characters (e.g., period, comma, colon, and semicolon). In sound-oriented systems, the dot represents a short sound and the dash a long sound. Other representations of dots and dashes are used with light-oriented systems and signal-flag systems. Separation between words is indicated by a space or simply the absence of a dot or dash. In a sound-oriented system, a space is indicated by a short time during which no sound is transmitted. The international version of the Morse code appears in the table below.

Character	Code	Character	Code	Character	Code
A	.-	N	-.	*Digits*	
B	-...	O	---	1	.----
C	-.-.	P	.--.	2	..---
D	-..	Q	--.-	3	...--
E	.	R	.-.	4	....-
F	..-.	S	...	5	.....
G	--.	T	-	6	-....
H	....	U	..-	7	--...
I	..	V	...-	8	---..
J	.---	W	.--	9	----.
K	-.-	X	-..-	0	-----
L	.-..	Y	-.--		
M	--	Z	--..		

Write a client/server application in which two clients can send Morse-code messages to each other through a multithreaded server application. The client application should allow the user to type English-language phrases in a `JTextField`. When the user sends the message, the client application encodes the text into Morse code and sends the coded message through the server to the other client. Use one blank between each Morse-coded letter and three blanks between each Morse-coded word. When messages are received, they should be decoded and displayed as normal characters and as Morse code. The client should have only one `JTextField` for typing and one `JTextArea` for displaying the other client's messages.